

# Indiana Mathematics Summit

## Mathematics Reform: Lessons Learned in Massachusetts

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# The Massachusetts Story of Reform

- “A Nation At Risk” was national call for change
- Education Reform Act of 1993 called for sweeping reform and held everyone accountable
- Unparalleled Legislative support
- Created standards and assessment system
- Refused to bend on standards or expectations
- Critics predicted skyrocketing dropouts and high failure rates.....

....They were wrong.



## Our Success Is Evident In Our Numbers

- In 2005, MA was first state to ever have the highest scaled scores on the NAEP Reading and Math exams in Grades 4 and 8 in the same year. Repeated in 2007.
- In 2006, 59% of 10<sup>th</sup> graders scored Proficient or Advanced in both ELA and Math
- In 2006, 84% of 10<sup>th</sup> graders earned their CD on their first try, up from 68% in 2001 and just 48% in 2000.
- SAT scores rose for 14 straight years
- Scored among top Nations on 2008 TIMSS



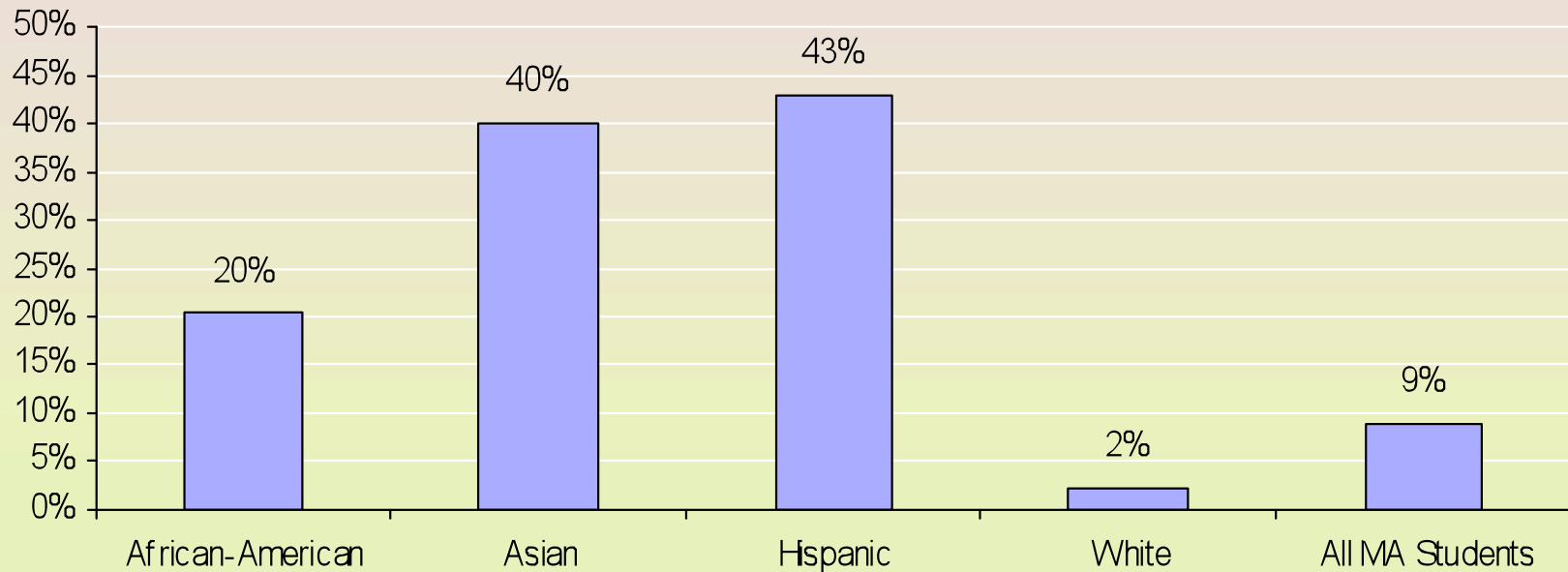
## Massachusetts By The Numbers

School Districts	388
Public Schools	1,875
Public School Students	972,371
Teachers	73,593
Core Academic Teachers Identified as Highly Qualified	94%
Student Attendance Rate	94.4%
Annual Dropout Rate	3.7%
Student-Teacher Ratio	13.2 to 1



# Numbers Show That Our Population Is Changing

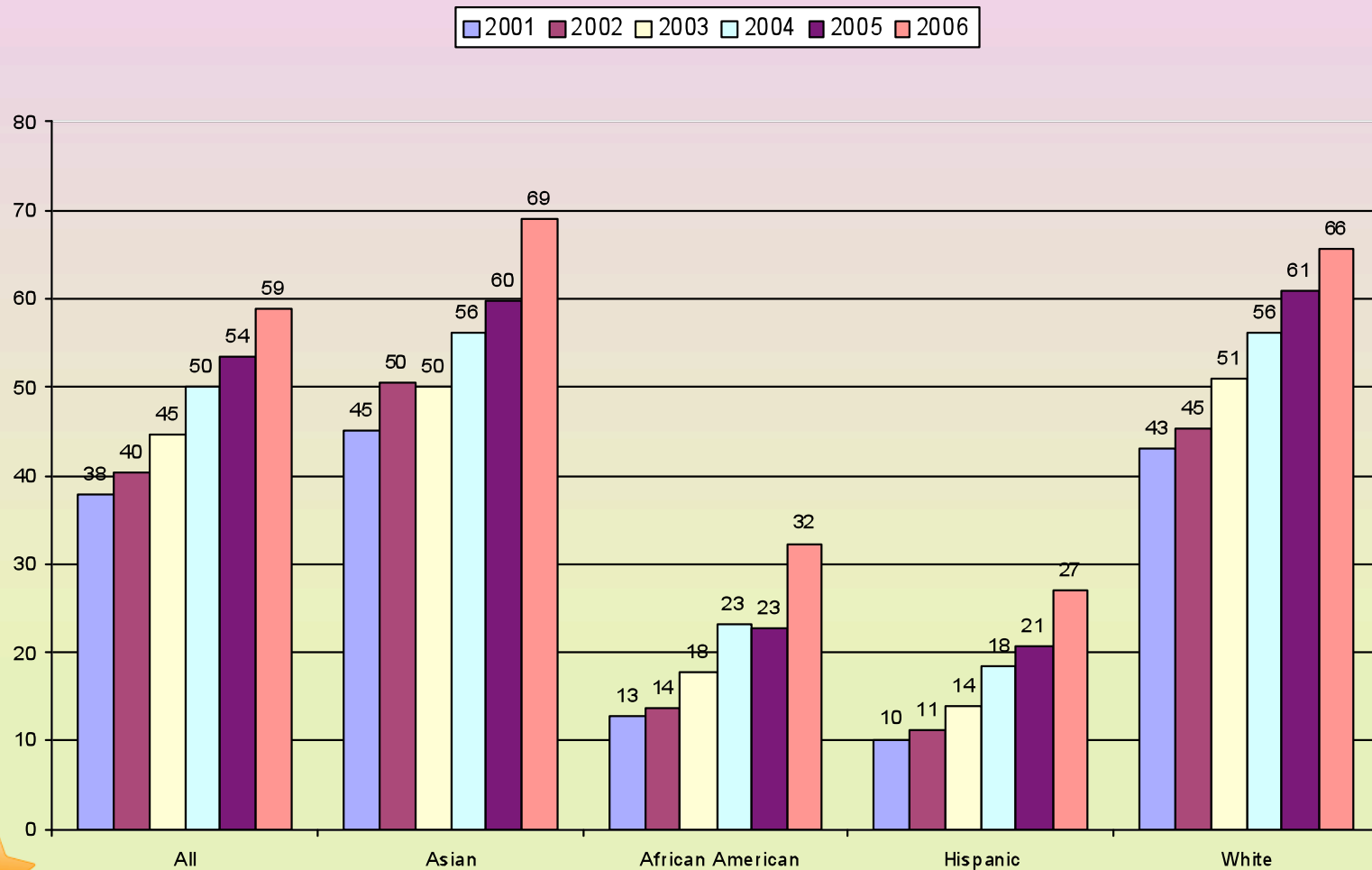
Percentage Change in Student Population 1995 - 2005



## Gr. 10 CD Attainment Results Show Steady Progress Since 2001

	2001	2006	Percentage Point Increase
All Students	68	84	16
African American	37	68	31
Asian	68	88	20
Hispanic	29	61	32
White	77	89	12
Special Education	30	55	25
LEP	7	39	32

# Percentage of Gr. 10 Students Scoring Proficient in ELA and Math by Race 2001- 2006



## We Started Slow, And Set The Right Standard

- We began by tackling English and Math only; rolled out other tests later.
- Administered English and Math exams for 3 years before they counted
- Set the “Goldilocks” passing score: not too high, not too low.
- Board of Education just voted to increase requirements to push more students to Proficient.





## We Created A Fair and Transparent System

- Test questions, rubrics and anchor papers released
- Student reports include item by item results
- MCAS Alternate Assessment Portfolio Program
- MCAS Appeals process
- Focused Retest
- Academic Support Grants
- Certificate of Attainment for kids who don't pass



# Mathematics Reform

## Relentless focus on Content

- Teacher Testing
- Common Algorithms
- Bridge Document
- Courses in real Mathematics



# Mathematics Reform

## Involvement at All Levels

- NSF Grant – PALMS
- Math Teachers – Boston & Brockton
- Study Groups
- RESEED



# Mathematics Reform

## Address Negative Mystique – Afraid of Math

- Harvard-Kent Elementary School
- Test Whiz
- What Proficiency Looks Like
- Mass Pike Toll Booths



# MATHEMATICS REFORM

## State Levers

- Recertification (CPUs)
- Professional Development Plan
- Summer Content Institutes
- Coaches and Math Specialists
- State Math Team
- Turnaround School Regulations



Is the Achievement Gap Closing? Ask these kids...



O'Bryant High School students from Boston celebrate with Mayor Menino and Gov. Romney after learning they've received the Adams Scholarship.



...Or These Kids...



Adams Scholarship recipients get free in-state college tuition for high MCAS performance.

...Or These Kids...



Students and teachers at the Dorchester Education Complex celebrated when they learned their MCAS performance made their school one of the top five most improved in the state.





## ...Or These Kids, Who Both Immigrated To The U.S. With Limited English Skills



Nara moved to the U.S. from Uruguay in 2001. She graduated 8<sup>th</sup> in her Fitchburg High School class in 2006. She attends Fitchburg State College.

Adilson is 19 and came to the U.S. from Cape Verde 14 months ago. He has already earned his CD and met all requirements for graduation from New Bedford High School.

